Biomarkers of Exposure		
Sample	**Biomarker**	**Smoke constituent**
Blood	Carboxyhemoglobin	CO
	4-Aminobiphenyl hemoglobin adduct	4-Aminobiphenyl
☆	Cotinine	Nicotine
24-Hour urine ☆	Nicotine and nicotine metabolites	Nicotine
	NNAL and NNAL-glucuronides	NNK
	3-Hydroxypropylmercapturic acid	Acrolein
	1-Hydroxypyrene	PAHs
	1,3-Butadiene metabolites	1,3-Butadiene
	SPMA	Benzene
Biomarkers of Potential Harm		
Sample	**Biomarker**	**Biological effect**
Blood	HDL and LDL-cholesterol	Artherosclerosis
	Fibrinogen	Cardiovascular disease
	HS C-reactive protein	Tissue injury
	Triglycerides	Artherosclerosis
	Von Willebrand factor antigen	Endothelial cell damage
	Total Bilirubin	Depletion of antioxidant capacity
	Total antioxidant capacity	Depletion of antioxidant capacity
24-Hour urine	11-Dehydrothromboxane-B_2	Platelet activation
	8-Epi-$PGF_{2\alpha}$	Lipid peroxidation
	Microalbumin	Endothelial cell damage

TABLE : Biomarkers analyzed in the TES

Bonnie ⇒ ✓
Henrico's Doctor Forest
Monday - Arr. @
2 PM - Outpatient Registration
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Fax → Order

Source: https://www.industrydocuments.ucsf.edu/docs/yjmj0001